

In the Claims:

Claim 1 - 6 (canceled)

Claim 7 (currently amended): The method as set forth in Claim-~~6~~ 21 wherein said yield function is represented by single yield curve that is a function of the distance between said current position of contour edge feature of said predicted wafer layout pattern and the corresponding edge position of said design pattern.

Claim 8 - 15 (canceled)

Claim16 (currently amended): The system as set forth in Claim ~~15~~ 24 wherein said stored information representing said yield function represents a single yield curve that is a function of the distance between said current position of contour edge feature of said predicted layout pattern and the corresponding edge position of said design pattern.

Claim17 - 20 (canceled)

Claim 21 (new): A method of creating a mask adapted for use in lithographic production of layout features on a substrate, comprising:

providing a design mask pattern of the design layout pattern to be created on the substrate;

providing a predicted layout pattern from the design mask pattern of what would be created on said substrate using said design mask pattern;

successively sampling selected points of related contour edge features across said predicted layout pattern and said design mask pattern to determine distance values between respective ones of said contour edge features, said distance values including the value of the width of a pair of metal lines and the distance between said metal lines;

providing yield curves as a function of said distance values between said contour edge features, said yield curves represented by a family of yield curves that are a function of the width of said metal lines and the distance therebetween;

determining from said yield curves for each selected sampling point whether the current position of the contour edge feature of said predicted layout pattern is at a position that provides acceptable yield; and

incrementally moving the said current position of contour edge feature of said predicted wafer layout pattern toward an edge position of improved yield.

Claim 22 (new): A method of creating a mask adapted for use in lithographic production of layout features on a substrate, comprising:

providing a design mask pattern of the design layout pattern to be created on the substrate;

providing a predicted layout pattern from the design mask pattern of what would be created on said substrate using said design mask pattern;

successively sampling selected points of related contour edge features across said predicted layout pattern and said design mask pattern to determine distance values between respective ones of said contour edge features;

providing yield curves as a function of said distance values between said contour edge features, said yield curves represented by a family of lithography limited yield curves of a metal layer process that are a function of the values of line width and space width using process window conditions and control of dose and focus;

determining from said yield curves for each selected sampling point whether the current position of the contour edge feature of said predicted layout pattern is at a position that provides acceptable yield; and

incrementally moving the said current position of contour edge feature of said predicted wafer layout pattern toward an edge position of improved yield.

Claim 23 (new): A method of creating a mask adapted for use in lithographic production of layout features on a substrate, comprising:

providing a design mask pattern of the design layout pattern to be created on the substrate;

providing a predicted layout pattern from the design mask pattern of what would be created on said substrate using said design mask pattern;

successively sampling selected points of related contour edge features across said predicted layout pattern and said design mask pattern to determine distance values between respective ones of said contour edge features;

providing yield curves as a function of said distance values between said contour edge features, said yield function including a single yield curve that is a function of the distance value between a metal line edge and a fixed point on an interlevel contact;

determining from said yield curves for each selected sampling point whether the current position of the contour edge feature of said predicted layout pattern is at a position that provides acceptable yield; and

incrementally moving the said current position of contour edge feature of said predicted wafer layout pattern toward an edge position of improved yield.

Claim 24 (new): A system for creating a mask adapted for use in lithographic production of layout features on a substrate, comprising:

storage means for storing a design mask pattern of the design layout pattern to be created on the substrate;

storage means for storing a predicted layout pattern from the design mask pattern of what would be created on said substrate using said design mask pattern;

processor means for successively sampling selected points of related contour edge features across said predicted layout pattern and said design mask pattern to calculate distance values between respective ones of said contour edge features, said distance values including the value of the width of a pair of metal lines and the distance between said metal lines;

storage means for storing information representing yield curves as a function of said distance values between said contour edge features including a family of yield curves that are a function of the width of said metal lines and the distance therebetween;

processor means for determining from said stored information representing yield curves whether for each selected sampling point the current position of the contour edge feature of said predicted layout pattern is at a position that provides acceptable yield; and

processor means for incrementally moving the said current position of contour edge feature of said predicted layout pattern toward an edge position of improved yield.

Claim 25 (new): A system for creating a mask adapted for use in lithographic production of layout features on a substrate, comprising:

storage means for storing a design mask pattern of the design layout pattern to be created on the substrate;

storage means for storing a predicted layout pattern from the design mask pattern of what would be created on said substrate using said design mask pattern;

processor means for successively sampling selected points of related contour edge features across said predicted layout pattern and said design mask pattern to calculate distance values between respective ones of said contour edge features;

storage means for storing information representing yield curves as a function of said distance values between said contour edge features including a family of lithography limited yield curves of a metal layer process that are a function of the values of linewidth and spacewidth using process window conditions and the value of dose and focus;

processor means for determining from said stored information representing yield curves whether for each selected sampling point the current position of the contour edge feature of said predicted layout pattern is at a position that provides acceptable yield; and

processor means for incrementally moving the said current position of contour edge feature of said predicted layout pattern toward an edge position of improved yield.